

Histopathological Evaluation of Skin Lesions with Special Reference to Skin Adnexal Tumors in a Tertiary Centre of North-Eastern India– A Three Year Study.

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Abstract: Dermatological disorders are common in all countries but the spectrum varies greatly with wide histological variation including both benign and malignant forms. Study of histopathological spectrum of skin diseases becomes very important as no such previous study was conducted in this region. **AIMS AND OBJECTIVE:** To study the histopathological spectrum of skin lesions with special reference to skin adnexal tumor in a tertiary centre of southern Assam, India. **MATERIALS AND METHODS:** In the period of 3 years, a hospital based retrospective study was conducted in the department of pathology, SMCH comprising of 245 cases. **RESULTS:** Out of 245 cases, 60.82% cases were males, 39.18% were females. Lupus vulgaris was the most common skin disease in this study. 85.31% cases were benign and 14.64% cases were malignant of which Squamous cell carcinoma was most common. Skin adnexal tumors comprised of 19 cases (7.76%). Benign SATS were 84.21% and malignant SATS were 13.78%. There were 36.84% males and 63.16% females. Most common SAT was of eccrine differentiation having 8 cases (42.11%). **CONCLUSION:** Skin diseases are more common in males than in females. Lupus vulgaris is the most common skin disease seen in this study population. SATS are more common in females.

Keywords: Skin Adnexal Tumor, Basal Cell Carcinoma, Squamous cell Carcinoma, Lupus Vulgaris, Eccrine.

I. Introduction

Dermatologic disorders are common in all countries but the spectrum varies greatly. While skin diseases are very common in many developing countries, they have not been regarded as a significant problem, which could benefit from public health measures.⁽¹⁾ This attitude is due to the assumption that skin diseases are a benign, not life-threatening minor nuisance, and that they do not merit measures, which may appear out of proportion to their low priority.^[1]

Cutaneous disorders are extremely common and range from irritating acne to life-threatening melanoma. Many cutaneous disorders are intrinsic to the skin, but some are manifestations of systemic disease. Thus, skin provides a uniquely accessible window for the recognition of numerous and varied disorders.

Only few statistical studies are carried out in Indian sub continent really stating the diseases that requires histological examination to aid in clinical diagnosis. Majority of skin lesions are diagnosed on the basis of clinical presentation & history. The histological diagnosis in turn is used by clinicians to aid in the management of patients & most appropriate clinical interventions. Not all the skin lesions require skin biopsy but some of them require it for proper diagnosis & identification of etiological agent. However, skin problems are generally among the most common diseases seen in primary care settings in tropical areas, and in some regions where transmissible diseases are endemic, they become the dominant presentation.^[2]

However not much is known about the spectrum of skin lesions in North Eastern India specially southern Assam, thus it is the need of time to conduct a pioneer study in this region consisting of a mix of different indigenous population. We have also included in our study the spectrum of skin adnexal tumor in this region.

II. Aims and Objective

To study the histopathological spectrum of skin lesions with special reference to skin adnexal tumor in Silchar medical college and hospital, situated in the southernmost part of Assam, India.

III. Materials and Methods

From the period of oct 2011 to oct 2014, a hospital based retrospective study was conducted in the department of pathology, Silchar Medical college and hospital, a tertiary care centre situated in southernmost part of Assam, India comprising of 245 cases.

Silchar is located in the southern part of Assam Situated on the banks of the Barak River where tropical climate prevails. Its coordinate are 24.82 *N and 92.8* E.

Inclusion Criteria:

All biopsies that showed definite signs of any specific pathology attending Silchar Medical College and hospital during the study period were included

Exclusion Criteria:

All skin biopsies that didn't showed definite signs of any specific pathology or inadequate samples were excluded.

Medical records and paraffin blocks were retrieved from the archives of the department considering the above mentioned inclusion and exclusion criteria. The retrieved blocks were recut and fresh sections were reviewed. After proper processing the formalin fixed paraffin embedded tissue section was stained in haematoxyline and eosin. Special stains like pas stain, Ziehl Neelsen stain, fitefaraco stain and Immunohistochemistry was performed in selected cases. All histopathology slides were examined by expert histopathologists.

Statistical evaluation was done SPSS version 15.0 and tabulation made on Microsoft excel 2013. Chi Square test and logistic regression analysis were applied.

IV. Results

The retrospective study of medical records showed that a total of 245 skin biopsies were performed in our institute in the study period of 3 years. Out of these 245 cases, Male were 149 cases (60.82%) & Females were 96 cases (39.18%). The male-female ratio was 1.55:1. Granulomatous lesion formed the major component of our study consisting of 43 cases (17.55%) with lupus vulgaris comprising of 32 cases (13.06%) followed by inflammatory dermatosis consisting of 38 cases (15.51%) with psoriasis forming the main bulk ie 27 cases (11.02%). Inflammatory dermatosis was found to be more common in males whereas granulomatous lesions were found more common in females. Although overall skin diseases were more common in males according to our study, but skin adnexal tumors and lesions of melanocytic origin were found to be more common in females than in males. Skin lesions appeared to be more in patients above 50 years of age comprising 116 cases ie forming 47.35% of total cases.

Table no-1 : Distribution of skin lesions

SL.NO	DISEASES	NO OF CASES	PERCENTAGE	MALE	FEMALE
01	INFLAMMATORY DERMATOSIS	38	15.51%	28	10
02	INFECTIOUS DERMATOSIS	27	11.02%	21	06
03	BULLOUS LESIONS	21	08.56%	11	10
04	GRANULOMATOUS LESIONS	43	17.55%	26	17
05	LESIONS OF MELANOCYTE	18	07.35%	08	10
06	BENIGN EPITHELIAL TUMOR & PRE-MALIGNANT LESIONS	06	02.45%	02	04
07	MALIGNANT LESIONS	34	13.88%	20	14
08	SKIN ADNEXAL TUMOR	19	07.76%	07	12
09	VENERAL DISEASE	02	0.82%	02	00
10	MISCELLENOUS	37	15.10%	24	13
	TOTAL	245	100%	149	96

Table no 2: Age wise distribution of relative risk of skin disease

AGE	Total	Skin Disease	Rate	Risk Factor	95 % CI		P value
0-9	245	10	4.08	Referent	Lower	Upper	
10-19	245	11	4.48	1.09	0.0253	0.0786	0.4118
20-29	245	35	14.28	3.5	0.1046	0.1922	<0.001
30-39	245	40	16.32	4	0.1223	0.2147	<0.001
40-49	245	33	13.46	3.29	0.0975	0.1831	0.001
50-59	245	45	18.36	4.5	0.1402	0.2369	<0.001
>60	245	71	28.97	7.1	0.2366	0.3495	<0.001

Out of 245 cases, benign cases are 209 cases (85.31%) & Malignant cases 36 cases (14.69%). Among malignant cases SCC comprises 50% of malignant cases followed by melanoma forming 25%. According to our study malignant and pre malignant lesions are most common in >60 years of age group.

Table no 3: Distribution of malignant skin lesions

MALIGNANCY	CASES	PERCENTAGE
Squamous cell carcinoma	18	50%
Malignant melanoma	09	25%
Basal cell carcinoma	07	19.4%
Sebaceous cell carcinoma	02	5.6%

In the present study Skin adnexal tumors comprised of 19 cases forming 7.76% of total cases. Benign SATS were seen in 16 cases (84.21%) and malignant SATS in 3 cases (13.78%). There were 7 males (36.84%) and 12 females (63.16%) with a female to male ratio of 1.71:1. Most common SATs were of eccrine differentiation comprising of 8 cases (42.11%), followed by tumors of hair follicle differentiation (36.84%) and lastly tumors of sebaceous differentiation (21.05%). The highest incidence was observed in the age group of > 50 years having 8 cases (42.11% of SATs). Male predisposition was seen in tumors of eccrine differentiation whereas female predisposition was seen in tumors of sebaceous and hair follicle differentiation. Pilomatrixoma and eccrine poroma were the two most common benign skin adnexal tumor and both showing a female preponderance, whereas the sebaceous carcinoma was the only malignant tumor of this group.

Table no 4: Distribution of SATs based on tumor differentiation

SL.NO	DIRECTION OF DIFFERENTIATION	NO.OF CASES	PERCENTAGE
01	SWEAT GLAND TUMORS	08	42.11%
02	SEBACEOUS GLAND TUMOR	04	21.05%
03	HAIR FOLLICLE TUMOR	07	36.84%
TOTAL		19 CASES	100%

Table no 5: Distribution of SATs

SL NO	TUMOR DIFFERENTIATION	TUMOR	NO.OF CASES	MALE	FEMALE	PERCENTAGE OF CASES
	ECCRINE ORIGIN = 08 cases					
01		Syringoma	02	02	00	10.53%
02		Eccrine spiradenoma	01	01	00	05.26%
03		Eccrine poroma	03	00	03	15.79%
04		Cylindroma	01	01	00	05.26%
05		Eccrine cystadenoma	01	01	00	05.26%
	HAIR FOLLICLE ORIGIN=07 cases					
06		Trichoepithelioma	01	00	01	05.26%
07		Pilomatrixoma	03	01	02	15.79%
08		Trichilemmal cyst	01	00	01	05.26%
09		Sporotrichosis	02	00	02	10.53%
	SEBACEOUS ORIGIN = 04 cases					
10		Sebaceous adenoma	01	00	01	05.26%
11		Sebaceous carcinoma	03	01	02	15.79%
	TOTAL		19 CASES	07 (36.84%)	12 (63.15%)	100%

V. Discussion

There are many occasions in which a clinician is challenged by a difficult diagnostic problem where Skin biopsy becomes a simple and inexpensive procedure which facilitates clinical diagnosis and treatment. According to several studies histological confirmation is the standard for the correct diagnosis in dermatology as compared to the clinical evaluation which ultimately aids in determining the epidemiological characteristics and patterns of skin diseases.

In the present study, male showed a clear predominance constituting 60.82% cases whereas only 39.18% cases were female. This finding is comparable to R. Thamilselvi et al ⁴ which showed 64.6% cases of male and rest are females. In the present study most common age group of presentation was in patients above 50 yrs of age which is again comparable to R. Thamilselvi et al ⁴ and R.singh et al ⁸.

Table no 6:

SL NO	NAME	MALE	FEMALE	M.C AGE GRP	M.C DISEASE/ GROUP	% M.C DISEASE	BENIGN CASES %	MALIG-NANT CASES %
01	Sandhya panjeta gulia et al (2014) ³	8.75%	91.25%	≤50 yrs	Non-infectious erythematous papulosquamous disease	24%		
02	R.Thamilselvi et al (2014) ⁴	64.6%	35.4%	51-60 yrs	Cystic lesion (keratinous cyst)	26%	87%	13%
03	Das et al (2007) ⁵	All male		21-30 yrs	Infective dermatitis	36.41%	99.06%	0.94%
04	Sabir et al (2010) ⁶	52.94%	47.06%		Vesico-bullous lesion	48.23%	78.83%	21.17%
05	Rakesh mehar et al (2014) ⁷	56%	44%	11-30 yrs	Granulomatous lesions	42.85%	94.65%	5.35%
06	R.singh et al (2012) ⁸	54.5%	45.5%	41-60 yrs	Non-specific dermatosis	25%		
07	Present study	60.82%	39.18%	≥50 yrs	Lupus vulgaris	13.06%	85.31%	14.69%

85.31% cases in the present cases were benign cases and 14.69% cases were malignant. This finding is comparable to Sabir et al⁶, Thamilselvi et al⁴ and Rakesh mehar et al⁷ with 78.83%, 87% and 94.65% cases of benign lesions respectively. Granulomatous lesion formed the major component of our study consisting of 43 cases (17.55%) with lupus vulgaris comprising of 32 cases (13.06%) comparable to Rakesh mehar et al⁷, followed by inflammatory dermatosis consisting of 38 cases (15.51%) with psoriasis forming the main bulk ie 27 cases (11.02%).

SATS:

SATs are a large and varied group of neoplasms which differentiate towards pilosebaceous apparatus, apocrine and eccrine sweat glands. Most SATs are benign. However, diagnosing them may have important implications as they might be the markers for syndromes associated with internal malignancies, such as trichilemmomas in Cowdens disease and sebaceous tumours in Muir –Torre syndrome These tumors are derived from multipotential undifferentiated cells present within the epidermis or its appendageal structures and the histologic features of a tumor are related to the activation of molecular pathways responsible for forming the mature adnexal structure [4].

Although malignant tumours are rare they are aggressive, have the potential for nodal involvement and distant metastasis with a poor clinical outcome. Therefore, establishing the diagnosis of malignancy in SATs is important for therapeutic and prognostic purposes.

Table no 7:

Sl.no	Name	Male	Female	Benign	Malignant	M.C age group	M.C tumor origin
01	Ankit Sharma et al (2014) ⁹	51.79%	48.21%	80.36%	19.64%	51-60 yrs	Eccrine origin (42.86%)
02	Radhika et al (2013) ¹⁰	-	-	77.14%	29.63%	30-40 yrs	Eccrine origin
03	Samaila et al (2008) ¹¹	50%	50%	88.5%	11.5%	30-40 yrs	Eccrine origin (41%)
04	V.Rajalakshmi et al (2014) ¹²	52.38%	47.61%	90.48%	9.52%	30-40 yrs	Eccrine origin (52.38%)
05	Saha et al (2011) ¹³	65.21%	34.78%	100%	0	30-40 yrs	Eccrine origin (56.52%)
06	Nair et al (2008) ¹⁴	30.31%	69.69%	100%	0	11-20 yrs	Eccrine origin (51.5%)
07	Present study	36.84%	63.15%	84.21%	15.79%	>50 yrs	Eccrine origin (42.10%)

Malignant Skin Tumors:

Malignant skin lesions constitute small proportion of cases but are considered very significant. The underlying table shows the distribution of different malignant tumours of skin in India in various studies and their comparison with the present study.

Table no 8:

Sl.no	Type of tumour	Bhudraja SN et al(1972) (n=102) ¹⁵	Chakravarthy RC et al (1968) (n=115) ¹⁶	Deo SV et al (2005) (n=77) ¹⁷	Shivanand Gundalli et al (2011) (n=80) ¹⁸	Present study (2015) (n=36)
01	Squamous cell carcinoma	49.02%	64.4%	55.8%	46.25%	50%
02	Verrucous carcinoma	-	-	-	5%	-
03	Basal cell carcinoma	17.65%	16.5%	18.1%	26.25%	19.4%
04	Malignant melanoma	29.41%	8.7%	26.1%	11.25%	25%
05	Adnexal carcinomas	0.98%	2.6%	-	7.5%	5.6%
06	Dermatofibrosarcoma	2.94%	-	-	-	-
07	Dermatofibrosarcoma protuberance	-	5.2%	-	-	-
08	Rhabdomyosarcoma	-	1.8%	-	-	-
09	Kaposi sarcoma	-	0.8%	-	-	-
10	Secondaries	-	-	-	3.75%	-

VI. Conclusion

Skin diseases are more common in males than females although SATs and Melonocytic lesions show a female preponderance. Lupus Vulgaris remains a single entity in the North-eastern India which contributes to maximum number of cases. Much more study is needed to be conducted on a wider scale, i.e., state or all India level, to study changes in spectrum & presentation of dermatological lesions.

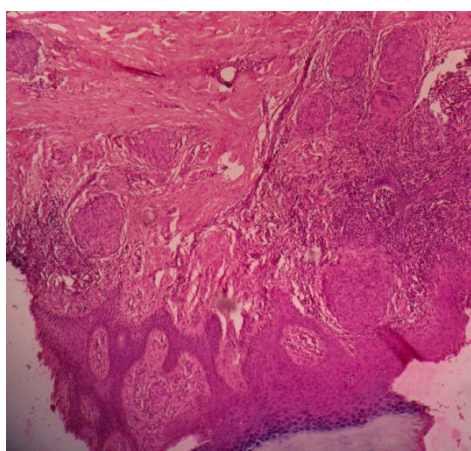


Figure 1: Lupus Vulgaris H&E (10X 4x)

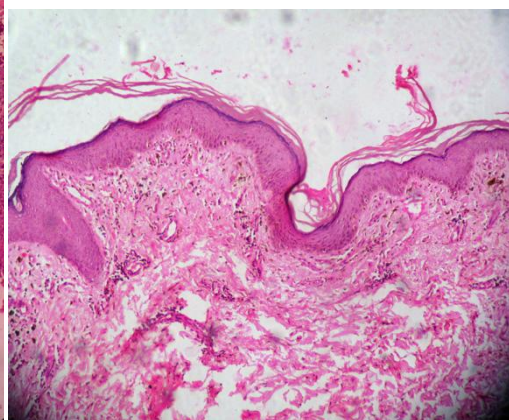


Figure 2: Pemphigus Foliaceus (10X 4x)

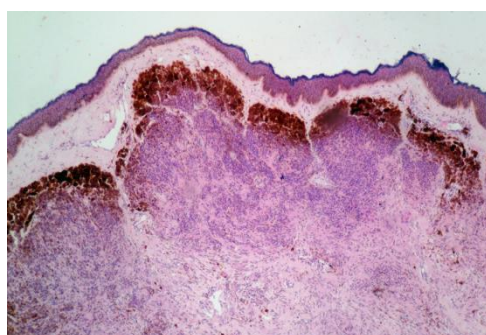


Figure 3 : Intradermal Nevus H&E (10 X 4x)

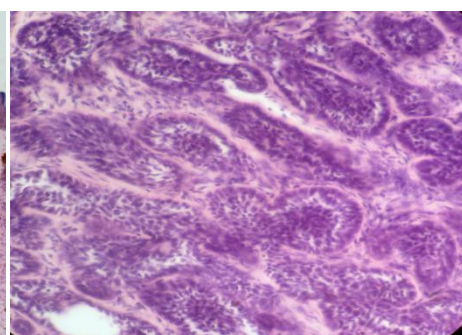


Figure 4: Basal cell carcinoma H&E (10 X 10x)

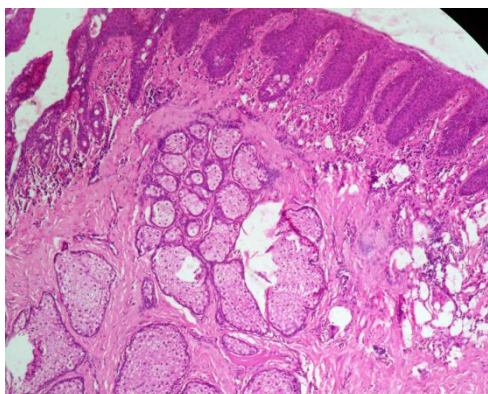


Figure 5: Sebaceous Adenoma H&E (10 X 10x)

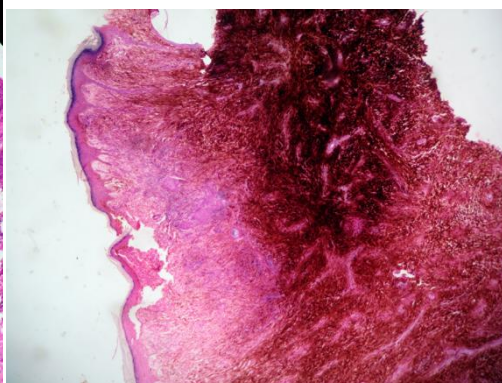


Figure 6: Malignant Melanoma H&E (10X 4x)

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